

Why arthroscopic partial meniscectomy?

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Abstract: "Arthroscopic Partial Meniscectomy versus Sham Surgery for a Degenerative Meniscal Tear" published in the *New England Journal of Medicine* on December 26, 2013 draws the conclusion that arthroscopic partial medial meniscectomy provides no significant benefit over sham surgery in patients with a degenerative meniscal tear and no knee osteoarthritis. This result argues against the current practice of performing arthroscopic partial meniscectomy (APM) in patients with a degenerative meniscal tear. Since the number of APM performed has been increasing, the information provided by this study should lead to a change in clinical care of patients with a degenerative meniscus tear.

Keywords: Meniscus tear; arthroscopic meniscectomy; osteoarthritis; knee pain

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Attributed to two controlled trials (1,2), showing a lack of efficacy of arthroscopic surgery, the number of arthroscopic surgical procedures performed to treat established knee osteoarthritis has decreased dramatically in the past 15 years. However, the number of arthroscopic partial meniscectomy (APM) performed has concurrently increased by 50%, with annual direct medical costs estimated at \$4 billion in the United States alone (3,4). Nevertheless, APM has been shown to be of no benefit to patients with concomitant knee osteoarthritis (5,6). Since the optimal treatment of a degenerative meniscus tear in patients with mild or no knee osteoarthritis is unknown, the objective of this target paper (7) was to argue against the current practice of performing APM in patients with a degenerative meniscal tear. The results of this randomized, sham-controlled trial show that arthroscopic partial medial meniscectomy provides no significant benefit over sham surgery on pain and function in patients with a degenerative meniscal tear and no knee osteoarthritis. This demonstration should lead to a change in clinical care of patients with a degenerative meniscus tear.

Since 1980, arthroscopic technique has become the standard method of treatment if patients require meniscectomy (8-11). However, according to a prospective study using validated questionnaires to assess patient-

relevant outcomes after APM (12), despite significant improvement was seen with only minor pain and other symptoms remained postoperatively, significant physical disability and handicap were reported. Technically, APM can be complicated by excessive resection, damage to articular cartilage, neurovascular injury, persistent drainage from portals, and infection; the procedure can be rendered more difficult, and the outcome less certain, if the surgeon fails to recognize concomitant injuries, malpositions the portals, or misidentifies the components of a meniscus tear (13). Moreover, people following APM are at increased risk of developing knee osteoarthritis (14). Studies to clarify the long-term clinical and radiological consequences of APM found that greater articular cartilage degeneration assessed at surgery, greater size of meniscal resection, greater laxity of the anterior cruciate ligament, and prior surgery on the index knee were the strongest predictors of worse functional outcomes (15,16) and will lead to significantly increased osteoarthritic change in the long-term (17-19). There is also evidence that high impact loading and a higher external peak knee adduction moment is believed to be a contributor for the development of osteoarthritis after APM (20-22).

Why we perform APM for a patient? Is it for symptoms relief? Prevention of cartilage degeneration? Or just for the removal of the torn meniscus itself? Significant variation

exists among practicing orthopaedic surgeons with regard to decision making for APM. The three clinical factors that most influenced a surgeon's decision to recommend APM were normal radiographic findings, failed non-operative treatment, and the presence of positive physical examination findings (i.e., positive McMurray test, joint line tenderness, and effusion) (23). Knee pain is usually the main reason that patients seek for help. APM is typically advocated for patients with knee pain in whom a tear is confirmed by MRI, particularly those without concomitant knee osteoarthritis. However, increasing evidence suggests that a degenerative meniscal tear may be an early sign of knee osteoarthritis rather than a separate clinical problem requiring meniscal intervention (24-27). For example, one study showed no significant association between the presence of meniscal damage and the development of frequent knee pain in middle-aged and older adults, once the co-occurrence of osteoarthritis at baseline was taken into account (28). Another recent study (29) suggested a neglected cause of knee pain called "medial abrasion syndrome" might be intermingled with medial meniscus tear and could be successfully treated by arthroscopic medial release. These findings proclaim against the current practice of performing APM in patients with an accidentally found degenerative meniscal tear. More possibilities should be taken into consideration before making this decision.

In conclusion, more and more evidence suggests that patient-relevant outcomes after APM provide additional information and preoperative evaluation for the meniscectomy patient should include a realistic expected functional outcome. Knee pain, as the main concern of patients, should be carefully evaluated for its possible causes before performing APM.

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Footnote

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